DOCUMENT RESUME

ED 121 826 TM 005 257

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TITLE Phi Delta Kappa Needs Assessment: The Application of Educational Goal Attainment Test Results.
PUB DATE [Apr 76]
NOTE 19p.; Paper presented at the Annual Meeting of the American Educational Research Association (60th, San Francisco, California, April 19-23, 1976); Not available in hard copy due to marginal legibility of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Caucasian Students; Comparative Analysis; Educational Assessment; Educational Needs; *Educational Objectives; Elementary Secondary Education; Individualized Instruction; Models; *Needs Assessment; Negro Students; Program Evaluation; Puerto Ricans; *School Districts; Statewide Planning; Suburban Schools; *Testing Programs; *Test Results; Urban Schools
IDENTIFIERS *Educational Goal Attainment Tests; Phi Delta Kappa Needs Assessment

ABSTRACT

The Educational Goal-Attainment Tests, in particular, were used in four large-scale undertakings that led to subsequent planning and development efforts. The first was a statewide study of Puerto Rican students in comparison to their black and white counterparts. Both urban and suburban samples were used with the emphasis on urban. These results, along with those of a second statewide study done primarily to assess the reliability of the tests, formed the basis for a statewide planning effort. These studies are used as illustrations of the applicability of group data for evaluation purposes and provide a basis for suggesting some of the necessary sampling strategies. An urban district used the tests as one ingredient in a full-scale evaluation study, and some of the methodologies of this study are described as exemplary of ways in which the tests may be employed. The use of these data for planning purposes will also be described. Finally, a suburban district used the tests to measure a set of goals different from, but similar to, the Phi Delta Kappa goals, in conjunction with a needs assessment. This required an added validation process and altered scoring. These procedures, along with the uses of the results for subsequent curriculum planning, illustrate the flexibility and usability of the approach for a variety of district needs. (Author/RC)

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Phi Delta Kappa Needs Assessment: The Application of Educational Goal Attainment Test Results

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INTRODUCTION

State Departments of Education face the task of sorting through all the educational needs in an entire state and selecting those which will be dealt with programmatically. Rather than piecemeal approaches, the selection of emphases or targets on a statewide basis creates the potential for impact. New Jersey's continuing interests in state planning led to the development of a set of goals patterned after the Phi Delta Kappa goals and to a program of mandated State Assessment in the areas of reading and mathematics achievement. However, the State goals were broad in scope and, like those of PDK, included diverse knowledge areas as well as attitude and behavior goals. To complete the feedback loop, the State of New Jersey invested in the development of the Educational Goal Attainment Tests as part of two statewide studies. The results of these studies were data which were used for comprehensive state planning and prioritizing for the upcoming school year. Whereas in the past great subjectivity was necessitated in assessing the degree to which specific educational needs were being broadly met, the Educational Goal Attainment Tests enabled the State Department of Education to replace gross estimates with more precise quantifications.

The Educational Goal Attainment Tests, in particular, were used in four large-scale undertakings that led to subsequent planning and development efforts. The first was a statewide study of Puerto Rican students in comparison to their Black and White counterparts. Both urban and suburban samples were used with the emphasis on urban. These results, along with those of a second statewide study done primarily to assess the reliability of the Tests, formed the basis for a statewide planning effort. These studies are used as illustrations of the applicability of group data for evaluation purposes and provide a basis for suggesting some of the necessary sampling strategies.

An urban district used the Tests as one ingredient in a full-scale evaluation study, and some of the methodologies of this study are described below as exemplary of ways in which the Tests may be employed. The use of these data for planning purposes will also be described later.

AERA Paper Presentation, San Francisco, Calif., 1976

Session No. 13.14

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Finally, a suburban district used the tests to measure a set of goals different from, but similar to, the Phi Delta Kappa goals, in conjunction with a needs assessment. This required an added validation process and altered scoring. These procedures, along with the uses of the results for subsequent curriculum planning, illustrate the flexibility and usability of the approach for a variety of District needs.

Fitting the Tests into a Planning Model

Charts I & II, on the following pages, illustrate the use of the Educational Goal Attainment Tests within a planning model. These charts are taken from the Test Manual published by Phi Delta Kappa in 1976. As they show, the EGAT can be used for initial assessment - prior to any intervention strategy, and for re-assessment - subsequent to the intervention strategy. Because of the short time the Tests have been available, they have only been used once on a recycled basis. (In this case, the urban district reported on below will use them this Spring for the third time.) However, their multiple used as an initial assessment device in conjunction with needs assessment are amply illustrated by the examples to follow.

EXAMPLES OF TEST USE

Statewide Ethnic Testing

The purpose of this statewide study was to determine the performance of Puerto Rican students in grades 7 to 12 in the public schools of New Jersey on a series of learning goals deemed relevant to the needs of these students. For comparison purposes the performance of non-Puerto Rican students (viz., whites and blacks) were also determined on the same learning goals. These learning goals are listed below.

1. Learn how to be a good citizen.
2. Learn how to respect and get along with people who think, dress and act differently.
3. Learn about and try to understand the changes that take place in the world.
4. Develop skills in reading, writing, speaking, and listening.
5. Understand and practice democratic ideas and ideals.
6. Learn how to examine and use information.
7. Understand and practice the skills of family living.
8. Learn to respect and get along with people with whom we work and live.
9. Develop skills to enter a specific field of work.
10. Learn how to be a good manager of money, property and resources.
11. Develop a desire for learning now and in the future.
12. Learn how to use leisure time.
13. Practice and understand the ideas of health and safety.
14. Appreciate culture and beauty in the world.
15. Gain information needed to make job selections.

16. Develop pride in work and a feeling of self-worth.
17. Develop good character and self-respect.
18. Gain a general education.
19. Understand and practice mainland culture.
20. Understand and appreciate Puerto Rican culture.
21. Develop skills in reading, writing, speaking, and listening in Spanish.

The first 18 goals represent the list developed by Phi Delta Kappa while the remaining three were developed for specific use with the Puerto Rican student population. All are measured by the EGAT.

This study must be viewed in the context of the three-pronged approach taken by the Puerto Rican Congress to deal with the problems of education faced by Puerto Rican students. The first step was to conduct a statewide needs assessment in which the 21 goals listed above were endorsed by the Puerto Rican community. The Puerto Rican Congress then found itself faced with the problem of how to assess the extent to which these 21 goals were being met by Puerto Rican students in the State. Once this could be determined, the PRC would be in the position of recommending specific curriculum changes and developing specific curriculum materials to overcome the deficiencies pointed out in the assessment.

It is the middle step, measuring and reporting attainment levels on the 21 goals by Puerto Rican students and comparing them to non-Puerto Rican students, to which this study was addressed. This study was further broken down into three phases. The first phase was concerned with the development of a test battery to measure the above 21 goals. The second phase dealt with the psychometric evaluation and refinement of this test battery. These first two steps are reported on in the Montare & Tuckman (1976) paper. The third step involved the study of Puerto Rican students and their non-Puerto Rican counterparts in the State using the tests developed and refined in the first two phases.

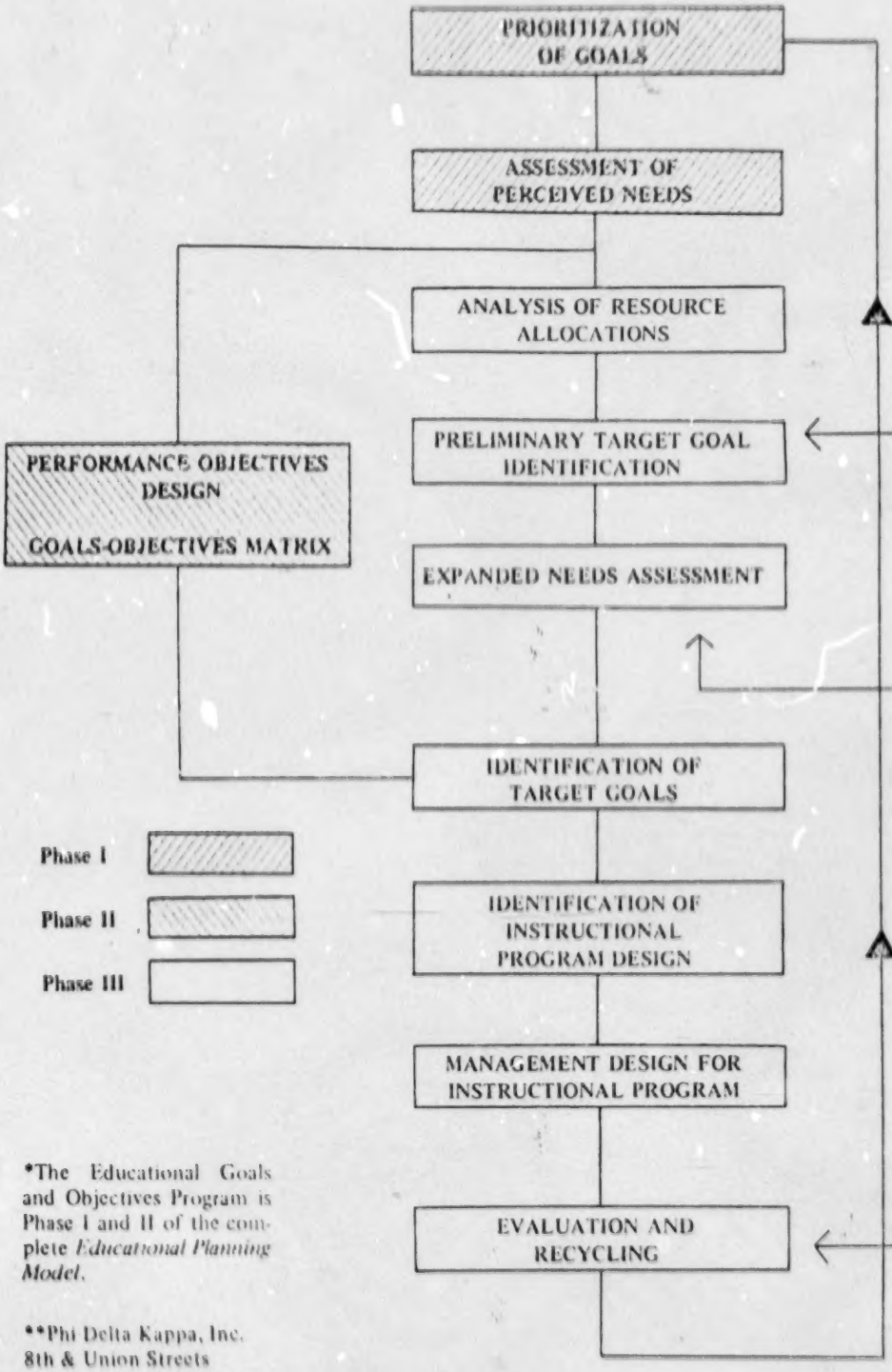
The study reported here involved Puerto Rican, white, and black students residing in 15 communities in New Jersey. All students were in grades 7 to 12 and results were reported on the then 90 scores from the Educational Goal Attainment Tests that relate to the 18 goals listed above.

The determination of which school districts to sample was made with the help of demographic statistics furnished by the Puerto Rican Congress of New Jersey. Although Puerto Rican students are represented in a few rural, non-urban areas in New Jersey, the greatest majority of Puerto Rican students are currently living within New Jersey's largest cities. With only one exception, the current study sampled every school district in the state that contains more than 1,000 Puerto Rican students.

USE OF THE EDUCATIONAL GOAL ATTAINMENT TESTS IN THE PLANNING PROCESS

CHART I

PHASE III OF THE EDUCATIONAL PLANNING MODEL* DISTRIBUTED BY PHI DELTA KAPPA**



Comments:

There are two ways the Educational Goal Attainment Tests may be used as part of the Expanded Needs Assessment:

1. Individual tests may be used which are related to the preliminary target goal identification to confirm needs and provide more precise data for later steps in the process.

2. All tests may be used to confirm the perceived needs in an expanded needs assessment.

The Educational Goal Attainment Tests may be used to evaluate the revised aspects of the instructional program.

*The Educational Goals and Objectives Program is Phase I and II of the complete *Educational Planning Model*.

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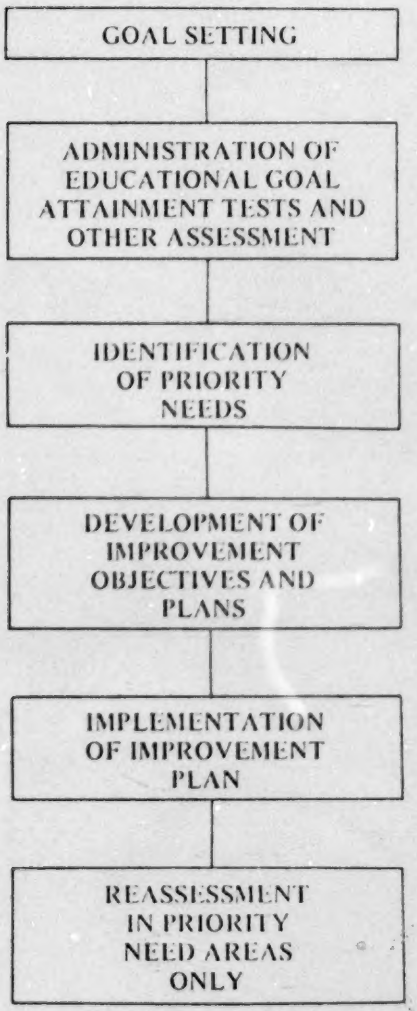
Reproduced from EGAT Test Manual

CHART II

Two ways the tests may be used in the planning process are as follows:

TARGETED SCHOOL IMPROVEMENT MODEL

This planning model does not yield a total educational plan for a school or district; rather it is a discrepancy model which yields a plan for improvement in areas of need. In the targeted school improvement model, a total set of goals is established. The goals are then assessed and priority needs determined. Objectives and plans are developed only in the areas of need. Improvement plans are implemented and evaluated. Periodically, the process is recycled to insure that adequate progress is being maintained in other goal areas.


GOAL SETTING
ADMINISTRATION OF EDUCATIONAL GOAL ATTAINMENT TESTS AND OTHER ASSESSMENT
IDENTIFICATION OF PRIORITY NEEDS
DEVELOPMENT OF IMPROVEMENT OBJECTIVES AND PLANS
IMPLEMENTATION OF IMPROVEMENT PLAN
REASSESSMENT IN PRIORITY NEED AREAS ONLY

Comments:

The *Educational Goal Attainment Tests* may be used to determine performance in goal areas and to establish priority areas of need. Other assessment procedures may be used in combination with the tests.

Improvement objectives are developed only in identified needs areas.

Plans are developed and implemented in priority areas.

Parts of the *Educational Goal Attainment Tests* can then be used to reassess progress toward the improvement objective.

Reproduced from EGAT Test Manual

The final sample size was as follows: Total, 4,718 students; Puerto Rican, 1,553 students; White, 2,078 students (including 229 "others"); Black, 982 students. Distributions by grade level were as follows: 7th, 859; 8th, 864; 9th, 814; 10th, 701; 11th, 703; 12th, 712. (Note: 63 students omitted a grade level designation and were not included in the analysis. Approximately 11% of the sample took each of the 10 tests except for English Language, which was taken by only 8.5% and Latin-American which was taken by 4%.

Knowledge Results. A comparison of Puerto Rican students and Black, Urban White, and Non-urban White students on the 15 major knowledge scores (all of which yielded significance) is shown in Table 1. Overall, the table shows that Non-urban Whites are the most knowledgeable group with Urban Whites second. Blacks run a distant third with Puerto Ricans slightly behind them in all but four instances. Thus, we may conclude that Whites acquire more knowledge between 7th and 12th grades (although not necessarily in or as a result exclusively of school) than Blacks or Puerto Ricans. Moreover, both minority groups experience roughly similar deficiencies relative to Whites. These differences tend to average about 15% on the EGAT with some dipping down close to 10% and others jumping up above 20%.

It can be seen from the table that Puerto Ricans score lowest relative to Whites in knowledge of HEALTH PRACTICES, MAINSTREAM CULTURE, AND AESTHETICS. One might argue that knowledge in these three areas is obtained primarily out of school but that is also true for many other items on the list. One might argue that these three areas are largely culture-bound but again other items on the list have the same feature.

Knowledge areas where Puerto Ricans are closest to Whites are in SPECIFIC JOBS, FAMILY MANAGEMENT, and LOGIC & SCIENTIFIC REASONING. However, Puerto Ricans show one of their largest differences with Blacks on the first of these three measures.

Attitude Results. A comparison of Puerto Rican students and Black, Urban White, and Non-urban White students on the 10 major attitude scores on which significance was obtained is shown in Table 1. Overall, the table shows that the attitudes of Non-urban Whites are the most socially acceptable with Whites second and Blacks and Puerto Ricans about equally far behind. Total attitude differences were far smaller than knowledge differences, rarely even reaching 10%.

The areas in which Non-urban Whites show their greatest difference above the Puerto Rican group are attitudes toward GOOD WORKMANSHIP and toward CAREER MATURITY. Least but still significant differences are found in attitudes toward the VALUE OF AESTHETICS.

Thus, Puerto Ricans "trail" Whites in the social acceptability of their attitudes as they did in the magnitude of their knowledge but differences in attitudes are less dramatic than were differences in knowledge. Moreover, the major attitude differences occur on career-related attitudes. Of major significance is the fact that differences between groups were not found on either attitudes toward SELF or toward SELF IMPROVEMENT.

Behavior Results. A comparison of the four groups on the three major behavior scales on which significant differences were obtained appears in Table 1. The major conclusion with respect to behavior is that the groups did not report major differences in behavior. The only exceptions were HEALTH PRACTICES & RESOURCE MANAGEMENT where Non-urban Whites engaged in more socially acceptable or relevant behavior than Puerto Ricans and CAREER & SELF AWARENESS where Non-urban Whites engaged in less relevant behavior than Puerto Ricans.

Grade Level Effects. These results are too extensive to describe in detail. Their overall trend supports or reinforces the findings already described, namely that knowledge differences are pervasive, self-reported behavior differences negligible, and attitude differences in between. These data do yield some important findings. Most notable among them is that Puerto Ricans enter the 7th grade with a considerable deficiency which is neither eliminated nor greatly magnified by the time 12th grade is completed. In knowledge, on the average, Puerto Rican students gain 16.7% over the course of the six grades as compared to 20.3% for Non-urban Whites, a small difference in comparison to the about 15% difference between them overall. Thus, Puerto Rican students in the 7th grade have an average knowledge of 35.2 on 15 major scores of the EGAT as compared to 50.7 for their Non-urban White counterparts, a deficiency of 15.2%. During 12th grade Puerto Rican students average 50.7% (exactly the same as Non-urban Whites did at the 7th grade) in contrast to 66.8% among Non-urban Whites, a deficiency of 16.1%. Thus, Puerto Ricans start lower and end where Non-urban Whites begin. They gain as much knowledge over the six-year period as do Non-urban Whites - indicating that the real deficiency occurs prior to 7th grade.

Conclusions. The major findings in terms of the Puerto Rican sample were that:

1. Deficits in knowledge are present in Puerto Rican students when compared to Urban Whites and Non-urban Whites in all 15 of the major knowledge scores. The Puerto Ricans exceed the Blacks in four of these scores and have lower scores in 11 of these scores.

TABLE 1

Differences Between Puerto Rican Students and the Other Groups on Major KNOWLEDGE, ATTITUDE, and BEHAVIOR Scores Yielding Significance

Score KNOWLEDGE OF:	Difference Between Puerto Rican and * Black	Urban White	Non-urban White
HEALTH PRACTICES	3.0	15.8	26.9
MAINSTREAM CULTURE	8.4	16.2	21.4
AETHETICS	3.2	12.4	20.1
KNOWLEDGE IN GENERAL	3.6	11.2	19.7
CAREER AWARENESS	1.6	9.7	18.8
RESOURCE MANAGEMENT	0.6	10.4	13.7
RELATED TO CHANGE	-0.7	10.7	18.0
DEMOCRATIC IDEAS	1.6	10.7	16.6
CITIZENSHIP	1.2	12.5	16.3
HOBBIES & LEISURE	2.2	7.0	15.8
ENGLISH LANGUAGE	-0.9	8.4	14.9
INDIVIDUALS & CULTURES	-0.5	8.3	14.1
LOGIC & SCIENFITIF REASONING	2.8	9.7	13.7
FAMILY MANAGEMENT	-1.7	7.6	11.2
SPECIFIC JOBS	8.3	4.3	11.1

Score ATTITUDE TOWARD:	Difference Between Puerto Rican and * Black	Urban White	Non-urban White
GOOD WORKMANSHIP	2.4	4.5	10.1
CAREER MATURITY	2.8	5.0	8.6
HUMAN RELATIONS	0	2.3	6.9
CITIZENSHIP	-0.7	3.0	6.8
CHANGE	-0.3	3.9	6.4
TOLERANCE TO OTHERS	-0.4	1.7	5.1
HOBBIES & LEISURE	0.7	5.1	5.1
FAMILY MANAGEMENT	-0.1	1.9	4.4
GOOD VALUES & CHARACTER	1.9	0.5	4.1
VALUE OF AESTHETICS	-2.0	3.5	1.8

Score BEHAVIOR OF:	Difference Between Puerto Rican and * Black	Urban White	Non-urban White
HEALTH PRACTICES	2.5	3.2	6.9
RESOURCE MANAGEMENT	-1.5	-0.6	6.0
CAREER & SELF AWARENESS	-0.4	-1.7	-8.2

* Scores without a sign mean that comparison group is higher than Puerto Ricans by that amount.
Scores with a minus sign mean that comparison group is lower than Puerto Ricans by that amount.

2. Deficits in socially acceptable attitudes are present in Puerto Ricans when compared to Non-urban Whites and Urban Whites in 10 of 13 major attitude scores. When compared to Blacks, Puerto Rican students score higher in these scores in five instances and lower in five instances.

3. Only three scores out of 12 major self-reported behavior scores display statistically significant differences between the four groups. Thus, the overall result is that the N.J. Scales do not indicate that major differences in self-reported behaviors exist between the Puerto Rican sample and the three other groups.

4. Two major findings exist in terms of grade-level effects. The first is that by the 7th grade Puerto Ricans are already scoring lower than Non-urban Whites. The second is that the deficit remains more or less constant from 7th through 12th graders. By 12th grade the Puerto Rican students exhibit knowledge score equivalent to Non-urban White 7th graders.

5. On the Latin-American Test the results are the opposite of those previously reported. Here the Puerto Rican students score significantly higher than either Whites or Blacks.

Recommendations. The recommendations which were made on the basis of the results were:

1. Educational intervention to remove the measured deficits of Puerto Rican students must begin well prior to the 7th grade.

2. Educational intervention to remove the measured deficits of Puerto Rican adolescents in New Jersey should be concentrated on knowledge. This means more effective teaching should be provided to a minority which differs in race, ethnicity, language and, above all, in social status in the cognitive domain.

3. Specific educational interventions relative to knowledge acquisition should be based on the order of scores shown in Table 1. However, it should be emphasized that the generality of the knowledge deficit rather than its association with specific knowledge areas is the more dramatic finding and suggests overall need.

4. Educational intervention to remove the measured deficits of Blacks and Whites in terms of knowledge of Latin American culture and language should begin prior to the 7th grade.

5. Educational intervention to improve the Puerto Rican students' attitudes may not be necessary for two reasons. First, the measured deficits are of a smaller amount than in the case of knowledge. Second, improvement in the knowledge areas may well cause improvement in overall attitudes.

6. On the basis of the results, no educational intervention directed towards improved behaviors seems necessary. Puerto Rican adolescents are not significantly different in self-reported behaviors than either their Black, Urban White, or Non-urban White peers. Equality of behavior was the measured result.

On the basis of these findings, the Puerto Rican Congress of New Jersey formulated its educational program for the following year.

Evaluation of an Innovative Urban Program

A local city school district is engaged in the full-scale implementation of a system of education called the Education Reform Program, which is an attempt to individualize all instruction. To determine progress toward this end, a validation study was undertaken which featured the Educational Goal Attainment Tests as an important ingredient. Of particular interest was the opportunity to give the Educational Goal Attainment Tests on a pretest - posttest basis, thereby creating the possibility of determining gains as a result of instruction. Results on the Educational Goal Attainment Tests, coupled with achievement data, data on teacher attitudes and classroom behavior, and student performance records, made possible not only an evaluation (or validation study as it was optimistically called) but a basis for subsequent planning for the success of the Program.

School districts, particularly urban ones, are confronted with many basic educational problems such as diversity of student interests and abilities. Individualized programs to meet student needs demand effective planning, piroritizing and appropriate allocation of resources for which the collection of data is essential. The Educational Goal Attainment Tests and accompanying methodologies were demonstrated inthis district to facilitate these processes.

Results. The most evident fact of performance on the EGAT by students in this district was its constancy from one testing to the other. Other than in the knowledge areas for grades 7 and 8, the overwhelming tendency of the means was to stay the same (which they did in all but a few cases). In knowledge areas in grade 8 the means showed a noticeable tendency to go up,while in grade 7 they went up as often as down. With the possible exception of grade 8, one must conclude that little or no gain took place on the EGAT over the school year 1974-75 as a result of the Educational Reform Program than might have occurred in its absence. However, it must also be pointed out that the Program did not lead to any decline in Educational Goal Attainment Test performance and, in the eighth grade, did produce overall gains in knowledge scores.

Hence, very few dramatic shifts took place in any measured area of knowledge, attitudes, behavior, or higher cognitive processes. Again, this outcome is difficult to assess in the short term. Program proponents could take heart in the fact that losses were not incurred; however, neither were gains achieved. It is entirely likely that "grass roots" instructional change takes more than a single year to produce noticeable change in outcomes on broad-based testing measures including such variables as attitudes. It was concluded that results on the entire broad-based testing program called for in the validation still left the validation issue undecided.

It was recommended that the district seriously consider a continuation of broad-based testing such as that introduced by the validation in order to continue to monitor changes in students' knowledge, attitudes and behavior. If funds and personnel could be found to support and carry out this testing and if it could be done with a minimum of disruption to the ongoing program, it was recommended that it be done again, at least once. This recommendation was implemented and the EGAT will be administered again this spring to see if changes have occurred after the second year of the program.

LOCAL DISTRICT PLANNING

The third study took place in a local suburban school district. The purpose for measuring the degree to which students in this district were currently meeting the 30 goals was to provide the high school with information to use in the writing of a curriculum development plan. The purpose of this plan was to increase student attainment of the goals. Therefore, this study indicated the levels at which these goals were currently being met as well as a series of recommendations for changes that were needed to facilitate further attainment of the stated district goals.

The first step was the development and adaptation of the test battery to measure the district's 30 goals. The study required the utilization of the ten existing tests and the development of a totally new scale specifically designed to measure those goals that were not adequately covered by items in the already existing battery. This step was successfully completed with the development of "customized" test scoring and a new test for that district.

The process used to "customize" the EGAT scoring was a consensual validation procedure. In this process 12 teachers representing a cross section of disciplines from the district high school judged to what degree each item used in the final test battery measured part or all of one or more of the 30 district goals. The procedure used was the following:

The 30 district goals were carefully studied by us to determine the degree to which each goal represented either one or more than one area of measurement. This analysis resulted in 42

separate goals and subgoals. These 42 goals and subgoals were then used as the basis against which each item developed was judged to be either a valid or invalid measure of the indicated goal. At least five teachers used the following scale to measure how well each item met the suggested subgoal:

4 points = item does not measure goal
3 points = item measures goal poorly
2 points = item measures goal reasonably well
1 point = item measures goal extremely well

Each item in the battery was judged against only one goal or subgoal at a time. An item was considered to be validated only when the mean judgment score for all five judgments combined was 3.0 points or better on the above scale. That is, an item had to be judged to be reasonably valid by a majority of the five teachers to be considered valid. By this procedure, 74 of the original 1,889 items developed were judged to provide an invalid measurement of their indicated goal and those 74 items were eliminated. (Many items were judged invalid for measuring one objective and valid for measuring another.)

Results. The results were too extensive to report here in detail and too specific to the district to have much general interest. However, it is instructive to see the form the results took, since they formed the basis for subsequent curriculum and program revision. For this purpose, results on two of the 30 goals were displayed in Charts III and IV.

Recommendations. The following recommendations made to the suburban district illustrate the value and use of EGAT results for making curricular decisions.

Knowledge. In the knowledge area, it appears that curricular revisions should be considered in the following areas where significance was not reached and mean levels are not high. (The grand mean for the five grades is shown in parentheses; keep in mind that the goals referred to are the district goals and not the PDK goals):

1. Goal 7, the values of the fine and performing arts (38.4)
2. Goal 9, physiological and emotional growth in family roles and male-female relationships (55.0)
3. Goal 17, evaluation and interpretation of what one sees, reads, and hears (46.3, 59.5)
4. Goal 20, other cultures (35.7)
5. Goal 28, recreational and leisure-time activities (52.6)
6. Goal 30, the problems of our society and their resolution (56.7)

CHART III
Reporting Goal 3 Results in the Suburban Study

Goal 3 - be able to apply basic scientific and technological principles.

Knowledge

1. Measurement. This goal is measured only by knowledge items. It was measured by 15 items on the General Knowledge Test (4, 51-54, 67-68, 106, 112, 121, 123, 131-132, 134-135)*and by 21 items on the District Test (11, 21-40).

* Item numbers on an old form.

2. Areas Covered. The items from the Delta Scale represent basic achievement in science (which were removed from Goal 1). The items on the South Brunswick Scale were written expressly to fit this goal with an emphasis on applied science and technology.

3. Appropriateness of Measurement. The reliability of the 15 Delta science items is .549, which falls into the marginal range; while the reliability of the 21 South Brunswick technology items is .569, which also falls into the marginal range.

4. Statistical Results.

(a) Science (Delta - 15 items) - The means for the grade levels on this portion of this goal are shown below along with the F ratio and p value.

	Grade Level (N = 106)						
Goal 3 (K) (Science)	8th	9th	10th	11th	12th	F	P
Means	46.1	59.6	58.4	60.9	63.9	3.228	.05

(b) Technology (SB - 21 items) - The means for the grade levels on this portion of this goal are shown below along with the F ratio and p value.

	Grade Level (N - 110)						
Goal 3 (K) (Technology)	8th	9th	10th	11th	12th	F	P
Means	47.0	54.8	56.7	59.1	66.4	4.877	.001

Graphs of the results appear below:

Goal 3 - Science

Goal 3 - Technology

5. Conclusions. It may be concluded that the high school experience is contributing significantly to growth and development of knowledge in science and technology. Significant gains were found in both science and technology of about 20 percentage points. The low final performance levels probably reflects the difficulty level of the items. At any rate, this would not seem to be as critical an area for improvement as communication skills.

CHART IV
Reporting Goal 5 Results in the Suburban Study

Goal 5 - Be able to express himself creatively in one or more fields of human endeavor.

Attitudes

1. Measurement. This goal is measured in part by 13 attitude items on the Self Test (items 88, 96-99, 103, 104, 109, 114, 115, 117, 121, 124).

2. Areas Covered. The items from the Eta Scale were written to measure attitudes toward developing hobbies and using leisure time, with emphasis on both indoor and outdoor activities.

3. Appropriateness of Measurement. The length of the scale, 13 items, gives a marginal reliability estimate.

4. Statistical Results. The means for the grade levels on the attitude portion of this goal are shown below along with the F ratio and p value.

	Grade Level (N = 100)						
Goal 5 (Attitude)	8th	9th	10th	11th	12th	F	p
Means	69.7	73.4	73.1	76.2	71.5	1.502	ns

A graph of the results appears below:

5. Conclusions. The F ratio for the attitude portion of this goal is not statistically significant, indicating a need for increased emphasis in this area. Although the school experience has not contributed to a statistically significant increase in mean scores in this area, the increase from the 8th grade to the 11th grade and the subsequent dropoff in the 12th grade, shows a need to determine reasons for this apparent unevenness in attitude development. Again, we see the seeming senior dropoff and again we see a peak level above 75 which represents an average scale value of "3" or "Agree" (with positive items). Attitudes toward creativity could stand an improvement at least in terms of the evenness of growth.

Behavior

1. Measurement. This goal is measured in part by 12 behavior items on the eeg Eta Scale (items 147, 151, 154, 156, 159, 160, 169, 171-175).

2. Areas Covered. The items from the Eta Scale measure self-reported behavior in activities requiring creative expression of various types.

3. Appropriateness of Measurement. The length of the scale, 12 items, gives a marginal reliability estimate.

4. Statistical Results. The means for the grade levels on the behavior portion of this goal are shown below along with the F ratio and p value.

CHART IV - Continued

4. Statistical Results - continued -

	Grade Level (N = 98)						
Goal 5 (Behavior)	8th	9th	10th	11th	12th	F	p
Means	51.5	49.8	52.5	49.7	47.7	0.431	ns

A graph of the results appears below:

5. Conclusions. The insignificant F ratio for this area indicates that the school experience is not contributing to the development of positive behaviors in creative expression. The lack of statistical significance in this area indicates a need to provide more opportunities for students to engage in activities that allow for creative expression and to develop their creativity to the point where they perceive themselves as being creative. Note, particularly, the low mean scores (they average at about the "Seldom" response and, if anything, tend to go down) suggesting that creative behavior is indeed an area for improved programming.

There are certain goals on which significance was not reached and yet do not appear to be areas where curricular change is immediately needed. Significance may not have been reached because mean levels were high to begin with or because of wide variations in student performance. The goals and grand means that fall into this category are as follows:

1. Goal 2, basic skills of verbal and written communication (as measured by the Gamma Scale) (63.9)
2. Goal 16, an inquisitive attitude toward the environment (59.9)
3. Goal 21, the values of other cultures (59.3)
4. Goal 23, the necessity of laws and how to change them (62.7)
5. Goal 24, rules regarding the rights of others (62.7)
6. Goal 26, how to relate to authority figures and express views in a socially acceptable manner (72.4)

Attitudes. In the attitude area there are 15 goals on which significance was not reached but on which means were high in the eighth grade and continued to be high, with only small fluctuations from one grade to another. It appears that students in the District already possess positive attitudes in many areas. Should higher means be desired, only then would it be necessary to develop curricular experiences specifically designed to produce attitude change, admittedly a difficult process in a relatively short period of time; that is, relative to the students' total life experiences. In general, then, it can be concluded that attitudes are not an area of overwhelming need, but that some improvement on the following 15 goals might be sought:

1. Goal 5, creative expression (72.8)
2. Goal 6, creative expressions of others (72.1)
3. Goal 9, family roles and male-female relationships (70.1, 72.9)
4. Goal 10, the interdisciplinary nature of school subjects (70.4)
5. Goal 14, setting life goals (70.1, 73.1)
6. Goal 15, a desire for continued learning (72.3)
7. Goal 16, inquisitiveness toward the environment (73.9)
8. Goal 17, evaluation and interpretation of knowledge (75.4)
9. Goal 21, the values of other cultures (74.1)
10. Goal 24, the rights of others (77.4)
11. Goal 25, cooperation in relationships with others (73.2)
12. Goal 26, relations with authority figures and expression of views (68.1)
13. Goal 27, reducing mental tension (72.6)
14. Goal 29, coping constructively with change (66.4)
15. Goal 30, the problems of our society and their resolution (72.8)

Behavior. In the behavior area there were 17 goals on which significance was not reached. Of these, only five have grand means that might be considered low enough to warrant considering curricular changes designed to effect more positive behaviors. These five goals and the grand means are as follows:

1. Goal 5, creative expression (50.2)
2. Goal 7, values of fine and performing arts (53.3)
3. Goal 12, discriminating among career options (58.3)
4. Goal 26, relating to authority figures and expressing views (55.5)
5. Goal 28, recreational and leisure-time activities (52.3)

The remaining 12 goals have grand means that are somewhat higher and indicate that curricular revisions may not be an immediate concern. These 12 goals and the grand means are as follows:

1. Goal 4, ecology and the balance of nature (71.3)
2. Goal 8, physical and mental health (75.1)
3. Goal 9, family roles and male-female relationships (69.4)
4. Goal 15, desire for continued learning (65.9)
5. Goal 16, inquisitive attitude toward the environment (66.9)
6. Goal 17, evaluation and interpretation of knowledge (72.1)
7. Goal 19, dealing positively with competition (66.0)
8. Goal 21, values of our own and other cultures (74.9)
9. Goal 23, constructive opposition to laws that need change (72.6)
10. Goal 25, cooperation in relationships with others (66.4, 73.0)
11. Goal 27, reducing mental tension (62.9)
12. Goal 30, becoming involved in resolving society's problems (70.1)

State Planning

We began with State Planning and shall end with it as an area where a tool such as the Educational Goal Attainment Test is relevant. Statewide testing on the EGAT of 5,000 students (obtained by combining results from the ethnic study reported above and a separate reliability study) produced the outcomes shown in CHART V. This chart portrays results for urban and non-urban samples on those priority areas deemed critical by the State, namely: basic skills, social relationships, producer/consumer, health, basic information, and citizenship, and those priority areas deemed either important or acceptable, namely: family life, creativity, learning process, ethics, and self-worth.

Conclusion. Obviously, existing testing programs do not cover such wide ranging knowledge, attitude, and behavior goals nor are existing testing programs connected to broad goal lists and needs assessments packages, as is the Educational Goal Attainment Test approach. It can help determine the operational schooling needs of large ethnic sub-populations, representative Statewide samples, or student bodies of urban or suburban school districts. Its results can be used for needs assessment, program evaluation, and planning for curricular revision and program implementation. While such a testing approach is far from perfect, it does seem to represent an important addition to the technology required for thorough and efficient public education.

The width of the bars indicates the percentage which people polled placed on the importance of the goal.

5/8 inch width = 68% to 80%
3/8 inch width = 59% to 67%
1/4 inch width = 50% to 58%
1/8 inch width = 0% to 50%

KEY

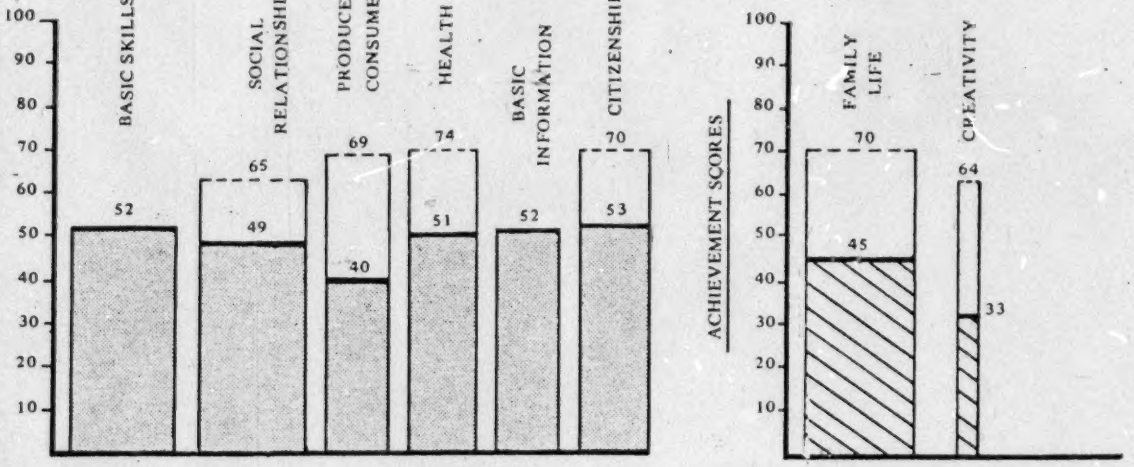
The priority of goals set by the Department of Education involve three categories:

Critical Priorities
Important Priorities
Acceptable Performance Priorities

The broken and unbroken lines indicate the achievement scores of students in two areas:

Achievement scores of students on attitude/behavior ----------
Achievement scores of students on knowledge ——————

Urban



Non-Urban